# Computer Tools and UW-Extension Educational Programming in Comprehensive Planning

## *A Discussion Paper*

> *UW-Extension is your high-tech, hands-on partner in lifelong learning.*
>
> - Kevin P. Reilly, Chancellor, 2000-2004

A variety of available computer tools (e.g., web-based data access tools, interactive web mapping tools, decision support and modeling tools, etc.) can assist Extension educators in carrying out UW-Extension's educational programming related to Wisconsin's comprehensive planning ("smart growth") law. This paper describes briefly how these tools can relate to accepted principles for UW-Extension involvement in local planning and the roles that county and campus based faculty can assume in such planning. "Principles" and "roles" are extracted from the UW-Extension document titled "Extension Educational Programming in Comprehensive Planning" (available online at www.uwex.edu/ces/cnred/pdf/edprogrm.pdf). Thoughts about how computer tools can support the principles and roles are offered as a starting point for discussion only and at this time do not necessarily reflect consensus thinking on this topic.

## UW Extension *Principles for UW-Extension Involvement*

**Principle:** "Comprehensive planning must be inclusive, rather than exclusive and exclusionary. Planning, to be effective and fair, requires a sense of citizenship and an appreciation of the inter-dependency and shared interests of urban, suburban, and rural areas. Similarly, it requires that current residents be encouraged to think not only of their needs and interests, but also of the needs and interests of future generations of citizens."

**How Computer Tools Relate:** Computer tools, particularly web-based tools with data and models embedded within, can help ensure that participants in a planning process have equal access to information and analysis tools. Many of these tools can provide the capacity needed to understand and model complex interrelationships. Such tools can help ensure a "level playing field," by giving voice to those who might lack technical or scientific background or otherwise feel at a disadvantage in having their voices heard (i.e. "citizen scientists," "citizen planners," and other concerned citizens can be a part of community decision-making processes). Ready access to a variety of types of information from varying sources fosters the ability for plan participants to identify inter-dependencies and shared interests. Tools performing complex analyses often have user friendly, intuitive interfaces and require simple or no data inputs. The straightforward outputs from these tools can be easy to understand and can foster public participation.

**Principle:** "In making decisions about land use and development, communities need to consider social and environmental consequences as well as economic impacts, and must consider long-term as well as short-term consequences."

> **How Computer Tools Relate:** Some computer tools have been designed specifically to predict impacts (e.g., changes in storm water runoff quantity and quality, changes in tax base, energy savings from urban forest canopy, etc.). Such tools can enhance local decision making by more fully disclosing short-term, long-term, and secondary consequences of decision options. Results from these types of tools can prove useful to both decision makers and concerned citizens.

**Principle:** "An important part of planning is respecting and preserving historic, cultural, and environmental resources that enhance community identity and sense of place."

> **How Computer Tools Relate:** During the inventory stage of plan development, computer tools can be used to access and acquire information about existing resources (e.g., historic buildings, archaeological sites, endangered species habitats, wetlands, etc.). Other tools can be used to predict impacts on valued resources (e.g., changes in storm water runoff quantity and quality, increases in greenhouse gas emissions, etc.). Interactive mapping, predictive modeling, and visual imaging tools can help foster a sense of place by helping plan participants develop visual and graphic representations of their community and its assets.

**Principle:** "Comprehensive planning must incorporate the principles of hazard mitigation and community sustainability to help insure that plans, policies, and decisions eliminate or reduce the potential impact of natural and other hazards."

> **How Computer Tools Relate:** In the inventory and analysis stages of plan development, computer tools can be used to access information about potential hazard areas (e.g., floodplain locations, contaminated sites, etc.) so that those hazards can be considered during the selection of plan alternatives. During plan implementation, computer models can help predict the consequences, including hazards, resulting from various land use decisions. Tools are now available to assess water quality, air quality, energy consumption, and related impacts of decisions. Knowing about potential impacts up front allows community decision makers to foster sustainable local decisions.

**Principle:** "Public education is needed to make citizens aware of public policy choices related to how growth is managed and to encourage citizens to participate in processes and initiatives at the local, county, state, and federal levels aimed at developing plans and policies related to land use and development."

> **How Computer Tools Relate:** Computer tools represent current technology that is not adequately brought to bear in public participation or local decision-making processes. Such tools can help illuminate the varied consequences of public policy choices (also see "Role as Educator," page 3). Computer tools can support and inform facilitation and consensus building processes that lead to public policy choices. They can also enhance the quality of discussion about local land use and land use choices.

## *County/Campus Based Faculty Roles*

Depending on the local situation, county and campus based Extension faculty may assume a variety of roles in comprehensive planning: educator, convener, facilitator, catalyst, researcher, information provider, collaborator, etc.

**Role as Educator:** Extension educators can:

- "Provide a wide range of information and education programs through workshops and locally based programs, web-based and printed educational materials, newsletters, distance learning opportunities, radio and television programs, and videos.
- Serve as a source of information for local governments by teaching on a wide range of land use-related topics, such as comprehensive and strategic planning, alternative ways of involving citizens in planning and visioning, zoning and land use regulation.
- Advise and assist county and local governments in establishing model planning processes to meet local needs."

**How Computer Tools Relate:** Computer tools can help educators translate complex jargon, issues, and designs into a common visual language that all participants in a planning process can understand and discuss. They can be an integral part of Extension pedagogy. Computer tools can also be the focus of Extension programs that cover the environmental or planning issues that specific computer tools address (e.g., non-point source pollution), how specific tools work, how tools can be used to support and enhance community involvement processes, how tools can be applied in planning and decision making, etc. Extension educators can help local officials effectively integrate computer tools into local processes–highlighting the ease-of-use and understandable outputs–to address specific local concerns or needs.

**Role as Convener, Facilitator, and Catalyst:** Extension educators can:

- "Provide forums for the discussion of development-related issues, including controversial issues that pose difficult public choices.
- Allow competing views to be debated.
- Encourage local planning and problem solving related to land use, development, and preservation.
- Help communities build consensus on how to accommodate growth and change."

**How Computer Tools Relate:** Computer tools can be used to aid facilitation and consensus building techniques. Typically, more than one decision maker (or interest group) is involved in the decision-making process. Often these decision makers have different preferences with respect to the relative importance of decision criteria and resulting consequences. When all information and issues are made "transparent" and "understandable" to the range of stakeholders involved, more fruitful discussion and effective consensus-building can occur in a public participation setting. Computer tools can allow parties to understand the likely impacts and help users to make informed decisions that reflect the various tradeoffs associated with alternatives.

**Role as Applied Researcher:** Extension educators can:

- "Conduct applied research on specific local comprehensive planning and land use issues.
- Prepare case studies of plans and policies attempting to manage and shape growth and development, with special attention to regional, county and local plans and policies that seek to balance competing economic, social, and environmental objectives.
- Evaluate alternative approaches and processes of undertaking comprehensive planning.
- Assess effectiveness in terms of involving citizens in decision-making processes, in achieving consensus on difficult policy questions, and in terms of effectiveness in regulating and channeling growth. Transmit lessons and insights gained to other communities."

**How Computer Tools Relate:** Because many computer tools have arrived on the planning scene only recently, their effectiveness for involving citizens in decision making, for helping achieve consensus on difficult policy questions, and for helping regulate and channel growth has not been extensively evaluated. The use of computer tools in local planning and decision making, however, provides alternatives to traditional decision-making processes and has the potential to greatly improve local processes. Extension staff can fulfill critical roles in witnessing the prevalence of tool usage at the local level and assessing the quality of the resulting plans and land use decisions. At this point, however, such evaluation of tool use remains rare.

**Role in Information Transfer and Collaboration:** Extension educators can:

- "Recognize issues of statewide significance, and communicate experience and knowledge gained at the local and county levels to state agencies with program responsibilities related to land use and growth management.
- Encourage discussion and refinement of proposals to strengthen and improve institutions, processes and tools of planning and growth management in Wisconsin."

**How Computer Tools Relate:** Extension faculty members are in a unique position to help state and federal agencies in evaluating their data access and data provision tools. Extension faculty members have opportunities to communicate the experiences of communities that apply computer tools to local environmental issues like development of total maximum daily load (TMDL) analyses, compliance with storm water regulations, protection of endangered resources, etc. Extension faculty members have an opportunity to help define and direct the Wisconsin Department of Natural Resources' technical assistance efforts to ensure they address issues of local and statewide importance.

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This discussion paper was prepared to support a Wisconsin Department of Natural Resources technical assistance program focused on computer tools for planning, conservation, and environmental protection.